

AN UNUSUAL NEW THERMOPSIS FROM TURKEY

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ABSTRACT. *Thermopsis turcica* Kit Tan, Vural & Küçüködük (Leguminosae/Papilionoideae) is described from the lake Akşehir area of Konya [B3]. All specimens examined had gynoecea of three free carpels — unique in the Papilionoideae apart from teratological forms.

Amongst some plants sent for identification to Dr M. Vural during a nine-month sabbatical visit to the Royal Botanic Garden, Edinburgh, were two specimens of an unusual new species of *Thermopsis* — a genus previously unknown from Turkey. Both specimens were collected by Mr M. Küçüködük in the same locality in the lake Akşehir area in Konya and one is in flower whilst the other has mature fruit. The unique character of these specimens is the uniform occurrence of three free carpels. Although presence of a polycarpellary condition has been previously documented in normal members of the Mimosoideae (2-6 in the Brazilian *Affonsea*, 5-15 in the New Guinea and NE Australian *Archidendron*) and Caesalpinoideae (*Swartzia*), we believe that, apart from teratological forms, this is the first record in the Papilionoideae. The polycarpellary condition of this *Thermopsis* is clearly a derived, rather than a primitive, character since the whole Papilionoid pollination syndrome has obviously evolved around the presence of a single median carpel. Further investigation of the population from which the specimens come is desirable to see whether occurrence of a tricarpeal gynoeceum is uniform — although it is known to be constant in 10 plants so far collected (five replicates of each of the two collecting numbers).

The new species is named *Thermopsis turcica*: we consider a geographical epithet more suitable than one referring to the gynoeceal character in case further investigation shows the latter to be inconstant. The closest related species appears to be *T. alpina* (Pallas) Ledeb, from Turkestan which is also the species showing the greatest geographical proximity. *T. turcica* and *T. alpina* differ in indumentum, carpel number, radicle position, and various other characters.

The habitat of the new species is a marshy lakeside where it grows with *Alisma plantago-aquatica*, *Butomus umbellatus*, *Bulboschoenus maritimus*, *Eleocharis palustris*, *Ceratophyllum demersum* and *Juncus* spp.

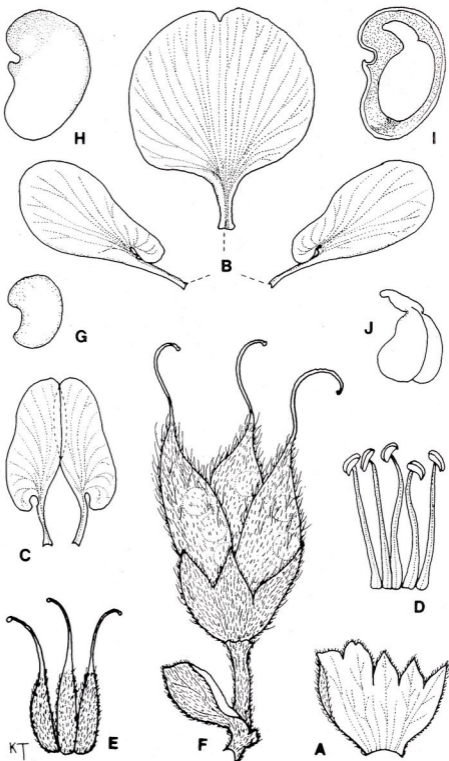
An examination of radicle and other characters of *T. turcica* show that it may be necessary to modify some of the diagnostic characters of the tribe *Thermopsidae*; these observations will be communicated in a future paper.

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***Thermopsis turcica* Kit Tan, Vural & Küçüködük, sp. nov.** (Fig. 1 & 2).

Herba perennis dense albido-villosa, rhizomate longo; caules annui erecti

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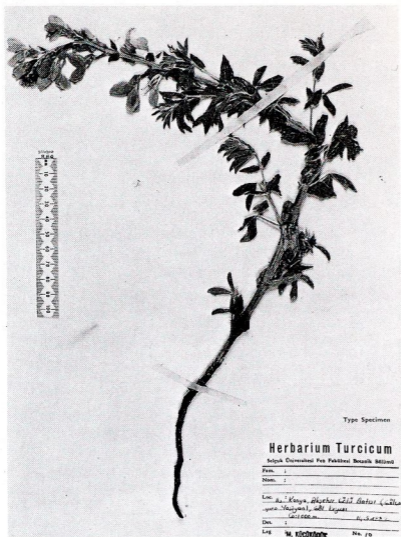


FIG. 2. Holotype of *Thermopsis turcica* Kit Tan, Vural & Küçüköğür (Küçüköğür 19, flowering material).

OPPOSITE

FIG. 1. *Thermopsis turcica* Kit Tan, Vural & Küçüköğür: A, calyx dissected; B, standard and wings; C, keel-petals; D, stamens with free filaments (5 illustrated); E, ovary of 3 free carpels; F, legumes with calyx and persistent bract; G, ovule; H, seed; I, seed in L.S.; J, embryo. A-F $\times 2$, G $\times 28$, H-J $\times 6.5$.

35–80 cm alti, ramis sterilibus foliatis, striati, ad bases vaginati. *Vaginae* scariosae, in folios stipulatos transientes. *Folia* alternata, digitate 3-foliolata, albido-sericea demum incano-viridia, stipulis foliaceis liberis. *Stipulae* in caule principale maiores, 15–50 × 6–15 mm; eae ad bases foliorum 12–24 × 4.5–9 mm, acutae. *Petoli* ad 2.5 cm longi. *Foliola* elliptico-ovata, 15–35 × 4–15 mm, acuta, utrinque dense albido-villosa. *Inflorescentia* terminalis racemosa 12–35 cm longa. *Flores* magni, bracteati, zygomorphi, hermaphroditi. *Bractee* foliaceae, ovatae, 7–15 × 3–11 mm, albido-villosae, margines longe ciliatae. *Pedicelli* fructiferi ad 13 mm longi, 1.7 mm diam. *Calyx* 13 mm longus, dense albido-villosus, inaequaliter 5-dentatus, bilabiatus; dentes 2 superiores in lobum obtusum interdum erosum 6 × 8 mm ad 1.4 mm divisum; dentes 3 inferiores ± aequales, triangulari-acuti, 4.5–5.5 × 3 mm. *Petala* 5, imbricata, aurea, libera, carinis partialiter conniventibus exceptis. *Vexillum* glabrum, 2.5 cm longum, ungue 5 mm longo et lamina suborbiculare retusa 2 × 2.5 cm. *Alae* glabrae, 25 × 9 mm (unguis 8 mm longus inclusus). *Petala carinae* 22 × 8 mm (ungues 7 mm longi inclusi), dorsaliter cohaerentia. *Stamina* 10, libera, cum petalis in annulo ± tumido ad bases carpellorum inserta; filamenta filiformia, non dilatata, 18–20 mm longa, glabra; antherae uniformes, dorsifixae, biloculares, 1.8 mm longae, luteae, longitudinaliter dehiscentes. *Discus* absens. *Ovarium* superius, 3-carpellatae; carpella libera, unumquidque 1-loculum, non septatum, albido-villosum, sessile. *Ovula* 10, in sutura adaxiale inserta; styli 12–13 mm longi, glabri, ad apicem recurvati, fructiferi persistentes; stigmata terminalia, parva, capitata. *Legumen* 2–3-spermum, elliptico-vel oblongo-ovoideum, 22–25 × 8 mm, leviter falcatum, ad maturitatem ± rectum, dense sericeo-villosum, indehiscens. *Semina* exarillata, subreniformia, 4–5 × 3 mm, laevia, non foveolata, pallide porphyrea. *Endospermium* tenue, oleosum; embryo magnum; cotyledones carnosae, 2–7 mm longae; radícula leviter incurvata, 1.1 mm longa. *Fl.* Mai; *fr.* Jun.–Aug. *Marshy lakeside, 950–1050 m.*

Type. TURKEY B3 Konya: W. of Akşehir Gölü, Gölçayır (Yasıyan), c. 1000 m, 14 v 1982, *M. Küçüködük* 19 (holo. ANK; iso. E, EGE, Selçuk Üniv. Konya); *ibid.*, c. 958 m, 10 vi 1982 (fruiting), *M. Küçüködük* 19a (para. ANK, E, K, Selçuk Üniv. Konya).